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Correspondence

Aneurysm Diameter

Sir,

In their recent article,[1] Aarts *et al.* make the following reference to our previous work:[2] "As described by Lederle *et al.*, the variability for measuring aneurysm diameters is decreased by using electronic calipers and a magnifying glass". This statement is included in support of their conclusion that "measurements on hard copy are not accurate enough for sizing in TPEG".

In fact, our study used mechanical calipers and a magnifying glass on hard copy CT scans mailed from multiple centres, with measurements made against the scale provided on the film. The intraobserver variability of our method appears to be comparable to the electronic calipers method tested by Aarts *et al.*, and better than the "ruler and hard copy" method they studied. Retrospective measurement studies using archived CT scans are much more readily conducted than studies requiring digital CT data available on a workstation, and our data suggest that archival studies can be done without loss of accuracy.

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References

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2 Lederle FA, Wilson SE, Johnson GR *et al.* for the Abdominal Aortic Aneurysm Detection and Management Veterans Administration Cooperative Study Group. Variability in measurement of abdominal aortic aneurysms. *J Vasc Surg* 1995; **21**: 945–952.

Health Outcomes

Sir,

We read with interest the editorial regarding patient-assessed health outcomes in peripheral arterial disease.[1] We agree that quality of life measurement in addition to traditional measures of clinical examination, blood pressure indices, graft patency, limb salvage and patient survival should be accepted as best practice.

The absence of a disease-specific questionnaire for use in patients with lower limb ischaemia led us to develop the "Vascuqol" at Kings' College Hospital. We followed methodology set out by Guyatt[2] for this task and following item selection and reduction produced a questionnaire that was tested for validity, reliability and responsiveness alongside the SF-36. Each item in the Vascuqol is answered using a seven point Likert scale. We demonstrated that the King's Vascuqol was more reliable and more responsive to change in patients with lower limb ischaemia compared to the SF-36.[3] However, the King's Vascuqol (in common with any disease specific instrument) should be used in addition to generic quality of life measures.

The Walking Impairment Questionnaire (WIQ) developed by Hiatt and Regenstiener was mentioned as an example of a disease specific instrument. It should be made clear that the WIQ is a functional scale and does not measure quality of life. The Vascuqol also avoids the criticism rightly made of the WIQ, in that the patients' estimate of walking distance was not used; rather we asked for the patients' own perception of whether they could walk further (or less) than before.

True validation of the Vascuqol will come with use. At present it is being administered alongside the SF-36 in the Bypass versus Angioplasty in the Severe Ischaemia of the Leg (BASIL) study, a multicentre UK trial co-ordinated by Professor A. Bradbury.

It is available for international use, and has so far been formally translated into Dutch, French, German, Italian, Swedish, Canadian French, as well as U.S. and Canadian English.[4]

The final paragraph states that a patient assessed measure of health outcome that quantifies the impact of intermittent claudication on aspects of health and well being is needed. Such an instrument already exists. The King's Vascuqol was developed with this aim in mind and is available for use.

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Author's Reply

We thank Messrs Morgan, Fraser and Bradbury for their interesting comments in response to the editorial on "Patient-assessed health outcomes in peripheral arterial disease".[1]

We agree that the assessment of quality of life should be integral in the design of future trials to determine the optimal therapy for intermittent claudication. Until recently, most studies for lower limb peripheral vascular disease have focussed on measures of patency as outcome measures. We are aware that the "Vascuqol"[2] has been developed for the assessment of quality of life in peripheral vascular disease, but we feel that its use in patients with intermittent claudication is limited by a fundamental methodology flaw in its development. Patients with intermittent claudication do not experience the problems of rest pain or tissue loss, as evident in patients with critical limb ischaemia. Unfortunately, four out of 21 items in the "Vascuqol" relate to problems that are more relevant to patients with critical limb ischaemia. Item 7 "Pain in the foot (or leg) after going to bed at night", item 8 "pins and needles and numbness", item 13 "pain in the foot (or leg) when at rest" and item 17 "ulcers in the leg (or foot)" are simply not applicable for the claudicant and therefore invalidate the "Vascuqol" when scored for patients with intermittent claudication. Therefore we believe that the "Vascuqol" is not a true condition-specific quality of life measure for intermittent claudication, which is still required and we therefore cannot recommend it as a valid outcome measure in studies for intermittent claudication.

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Carotid Endarterectomy

Sir,

We read with great interest the article by Peiper *et al.*[1] concerning the early and late outcomes of carotid eversion endarterectomy (CEE) compared with traditional carotid endarterectomy with patch closure (CEAP). In this retrospective study the authors concluded that the safety and durability of the two surgical techniques were comparable. We have recently published three papers[2–4] on the same subject, so we would like to offer some comments on the issues raised by Peiper *et al.*[1] In the first prospective study regarding 336 primary carotid endarterectomies (CEAs) performed in 310 patients, randomly attributed to two groups (169 CEEs and 167 CEAPs),[3] we found that CEE is generally superior to the gold standard CEAP in reducing perioperative stroke risk rate (0% vs. 2.9%; $p=0.03$) as well as late occlusive events (0% vs. 3.7%; $p=0.01$), though the outcome of the CEAP technique in our hands correlated well with the results of the principal multicentre trials. Our second prospective study[4] confirmed our findings regarding clinical outcome and the incidence of restenosis in 86 patients undergoing bilateral CEA, in whom CEAP was performed on one side and CEE on the other. Patients were randomly selected for sequential surgical treatment involving either patching/eversion or eversion/patching. The overall perioperative mortality was 0%, and, though the difference in the incidence of perioperative ipsilateral ischaemic stroke was not significant (3.5% vs. 0%), the greater rate of combined transient ischaemic events and strokes with CEAP approached significance (7% vs. 1.2%; $p=0.06$). In addition, CEAP had a significantly higher incidence of restenoses (4.7% vs. 0%; $p=0.02$) and of combined late occlusive events and restenoses (13% vs. 1.2%; $p=0.004$). The better results appear to be related: (1) to the significantly lower carotid cross-clamping time required for CEE, which avoids the need to selectively use an intraluminal shunt; and (2) to the improvement in several technical details, i.e. the routine correction of the residual distal internal carotid artery elongation and preservation of the original carotid configuration, especially with regard to the inclination and amplitude of the ostium of the internal carotid artery.

On the basis of these findings, we are enthusiastic about the CEE – hence our interest in obtaining more information concerning the results reported with CEE